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Historicism and Morphology of City Form

Kermit J. Lee Jr

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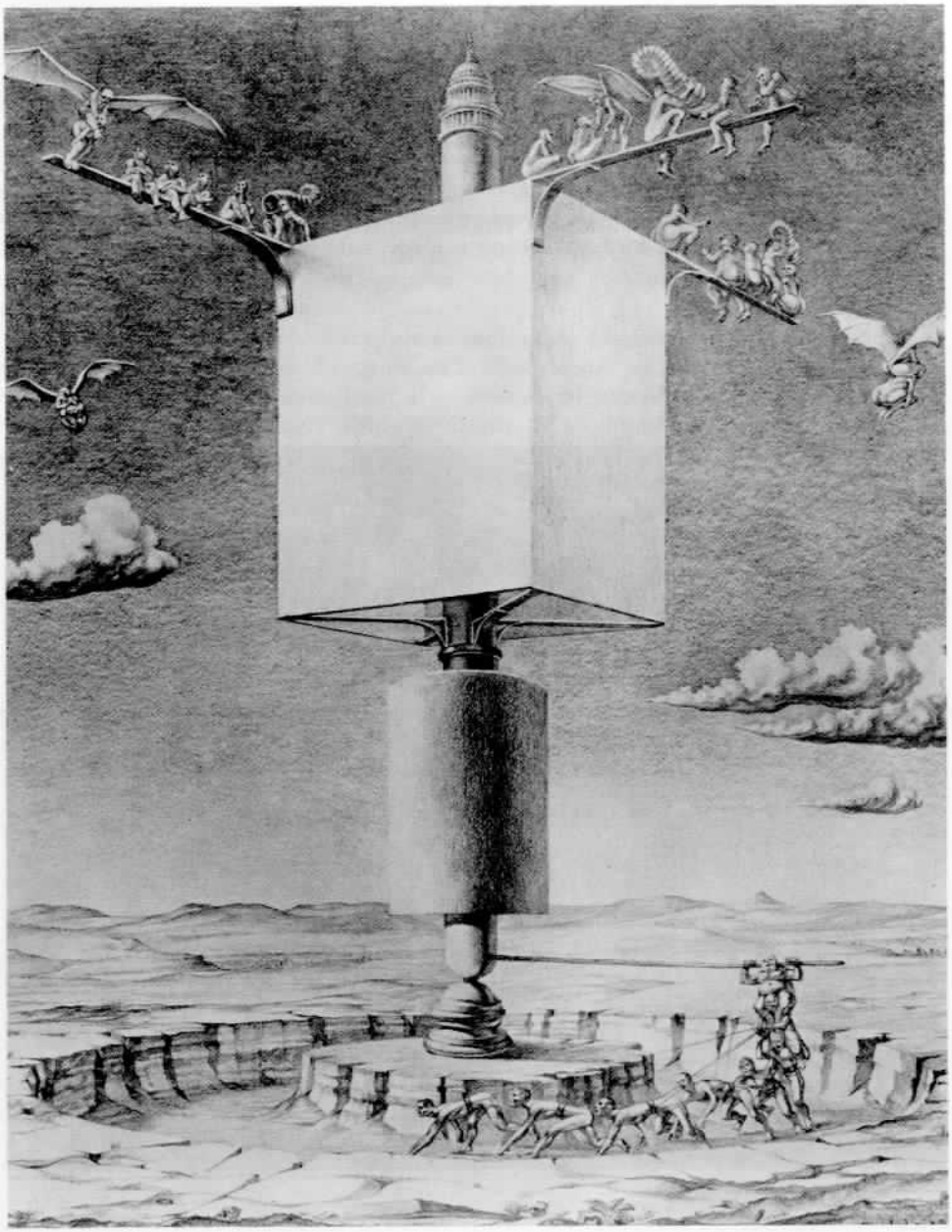


HISTORICISM AND MORPHOLOGY OF CITY FORM

KERMIT J. LEE, JR.

Kermit Lee has been teaching Design at the Syracuse School of Architecture for five years. At the same time he has been active in practice and has made significant contributions as well to other professional and academic affairs. He has become known for his interest in objective design methodology and in urban design and has written frequently on these subjects.

> It is my proposition that, to all practical purposes, western man remains obdurately pre-Copernican, believing that he bestrides the earth round which the sun, the galaxy, and the very cosmos revolve. This is a great delusion indeed, and the time has come to dispel it, for it has fueled our ignorance in time past, is directly responsible for the prodigal destruction of nature and for the encapsulating burrows that are the dysgenic city.
>
> Ian McHarg

Introduction

Early in my experience in Europe, I had the good fortune to be influenced by the writing of Professor Herbert Ohl, at Hochschule fuer Gestaltung, Ulm. One statement of his intrigued me, not so much from its contemporary content, but for its future portent: "Architectural planning for collective living, i.e., environmental design, consists in the additive enlargement and organic disposition of an elementary space to form a *system* of spaces, also basic and elementary. The task of the architect consists, then, in creating connections or contacts where they are beneficial or desired; or to prevent them when they are undesirable or disturbing." [2] At this same time, I was a graduate student (Oberstufe) in the Department of Regional Planning, Housing Research, and Urban Design at Technische Hoschschule, Brannschweig, Germany, working with Professor Dr. Johannes Göderitz, collaborator of Ernst May, and originator (author) of Südstadt Braunschweig, Rendsburg Town Centre, and others, projects which occupied me for the better part of a year.

The power of the architect was/is awesome. Not in the same way a "King Kong" or a "2001 Space Odyssey" or a landing on the moon is awesome, but in the curious turns, manipulations, or machination *his* resultant activities can impose, influence, cajole, or contribute to the broad range of activities with which social man occupies his day. The City.

As social man, regardless of being architect, there was never a question of right or permission, or meddling in others' affairs, but the natural extension of parameters, cause/effect relations, and therefore, solutions to design problems that were, of a sudden, urban. As soon as one considered the circulation possibilities, the life systems, the size, shape, form, and location of his single structure, his activity *had* to burst through the skin; his mental capacities and synthesizing activity *had* to celebrate a natural act, the "peopling of a space or a system of spaces."

Broad problems began to state themselves with even more clarity, and now in terms of what may be an illustrative or diagrammatic Sociology: urban structure and sub-structure in concentric rings, the web or tendrils of growth, the systematizing of cores and sub cores. *The base of the city,* layering principles, lineal growth, demographic/ethnic congestions, migration systems (social, economic, physical) and the obvious nature of the history of cities and urban form as a catalyst or a support system. The City was architecture.

Yes, a definition must be formed that recognizes architecture as the provision of space and the mastery of certain support systems that nourish the space. Accretion of spaces between buildings, The City. How can an architect who assumes certain adequacies or competences stop at the facade or the "unpunctured" skin of his building? His building cannot exist without a context, and that context becomes more and more the shared context of many other buildings, visual and actual.

The means by which an architect approaches a problem and achieves a solution are commonly known as "design process." Architects have traditionally responded to a range of societal situations and problems. Contemporary man is 80 percent urban. Therefore, we have established a simple relationship that identifies the contemporary and the future activity of architects as *Urban Design*.

Robert Geddes, writing in *AIA Journal*, said that contemporary architectural problems led toward a new type of man, requiring a new system of skills. . . . "They should acquire the ability to work within real world assignments. They should be aware of change and have the ability (adaptability) to meet that change. And they should develop a concept of a better environment towards which to head."[3] The references to new, to change, and to future are obviously references pointed toward inadequacies in our *present definition of the profession, educational process, and general professional objectives*. The design of futures become apparent and important, whether we speak of historicism and the need to preserve building groups in "Graubundin," or the need to establish an entirely "new town" east, west, north or south of "here."

I must insist, however, that the approach to problems of an urban nature by the architect requires more than the talents to put one room/space next to another, but refers back to Professor Ohl—collective, additive, and connection—contrast, destroy, all very strong terms and not only as basis for a single client's needs, but to support the needs and desires of all of society as probable occupants. Order and sequence, patterns, rhythm, and system are parts of the design process, and so are complexity, ambiguity, and contradiction. Fumihiko Maki said that the progenitors of any formal idea include politics and economics[4]—again coexistence and conflict.

City Form

Our contemporary era did not invent the city, but it has discovered it. Gregarity, society, economics, defense, geography, locus of access, any of the genius loci that began to formulate the city, are parts of this continuum. At any one given time, former cities were the display places for a participatory *minority* whose ostentation (banality) found display and physical support in the core (more old men in graying corners). But the agora *was* really intended for this activity. The activity is resultant, however, of an economic idea that is currently anathema (usury and exploitation—through war) to our way of life, the indulgence of sedentary pleasures based on the toil of others. The agora and the temple precinct, where cultured dialogue could take place—questions and answers posed and reduced to essence, and news transmitted, became the market and the church forecourt. Then, this space became the Guildhouse/townhouse square; and city men became the core-builder that we now see. In this context, the core is the envelope and man the celebrant in a panoply that covers the full range of activities from toil through recreation of the spirit and body.

The reasons for city building are known by most of us, and the politics of securing acquisitions of lands and areas demanded an *extra* extension of them. This activity, of securing lands, commencing roughly with the dissolution or cessation of the Holy Roman Empire, became one of the important political reasons. The Edo-Kyoto Road (The Tokkaido Road) in Japan is the same, in many respects, as the attenuation of the physical line of Zähringer cities in the Rhine Valley. By the 10th century, most men realized the importance of cities as central, and simultaneously, symbolic, to their ways of life. The position of the market, the gathering space, and the major institutional spaces in a physical hierarchy was important in the philological determination of many root words and prefixes in Eastern and Western languages at the same time. But, and naturally owing to localized and historic necessities, the physical patterning for these cities were, at times, completely dissimilar up to and including the end of the popular Renaissance or 17th century. The patterns which we have come across are usually the Radial (in Western Culture), and the Lineal (in Oriental Culture). It is probably necessary to note that insular cities from Timgad to New York, with essentially geometric and physical bounds set forth within some "permanent" boundaries, have always existed. After the destruction of the walls, and the extroversion of city building, however, these cities usually served as a nucleus to a radial scheme which would later thrive. (Fig. 1 Radial, Fig. 2 Lineal)

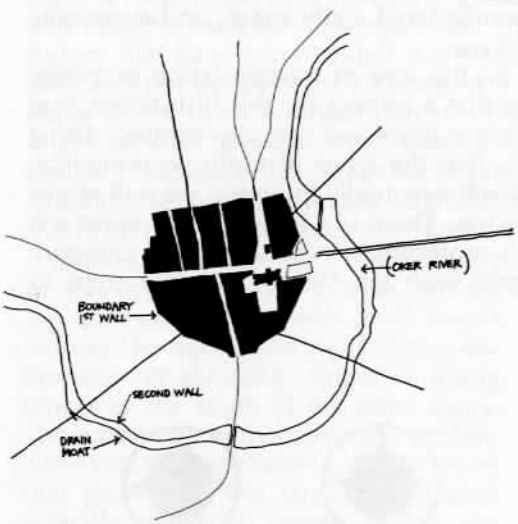


FIG. 1 TYPICAL RADIAL DEVELOPMENT (BRAUNSCHWEIG, GER.)

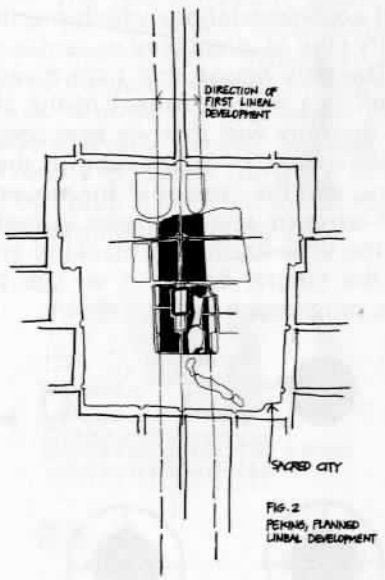
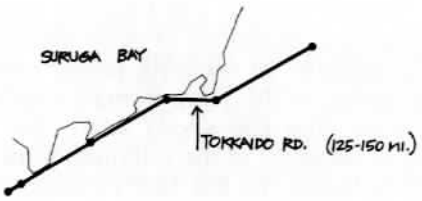
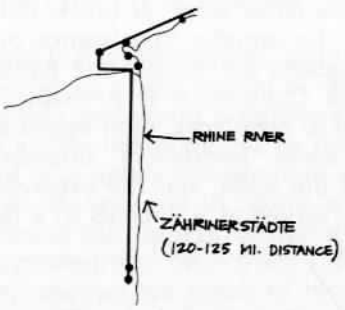


FIG. 2 PEKING, PLANNED LINEAL DEVELOPMENT

The lineal city that is, in fact, the Tokkaido Road, following the irregular edge of Suruga Bay, near the East Coast of Japan, compares favorably with the geographic distance and the loose dozen[5] Zähringer cities from Bern to Fribourg, following the Rhine (Fig. 3 Map-lineal Tokkaido Road, vs. Zähringer). Common to both of these is the basis that they both serve in the Megalopolitan[6] areas that they have formed. The land mass of Europe is more rectangular or regular in overall geometry, so that the ultimate extension of any city pattern would tend to have a regularly patterned form, assuming that this whole land mass were urban. Similarly, Japan is a linear land mass and commands a linear

urbanization in the extremity. From this rather cosmic approach, we may reduce to localized scale and reflect that the natural accretion of urban land is along a major transportation route or outward from a centralized nucleus. The Tokkaido Road, or the mini-Megalopolitan area where it originated in the late 11th century is an un-named urban area that extends, without interruption, for some miles. The Zähringer cities are Medieval nucleus-states *commanding* the communication or movement along a linear path. The primary mode of transportation in the former example was by foot and in the latter by horse-drawn vehicle. In both cases, the prime movement system was in favor of the ruling class. Essentially, the rhythm that could be maintained in a daily unit of travel, either by sedan chair and porter, or by horseback, indicated the location of the lodging and accommodations which eventually originated a city space, and eventually a city core of attenuated or centripetal shape.





The only reason that I am dwelling on the idea of transportation or *movement* as a historic format of the city, is that a respect for this historicism may be the only way that we may revitalize our cities and our city centres. Along these routes, by submission to the idea that the types of traffic, communications, and the "reasons" for movement will eventually intersect, we will establish cores or activity spaces, namely, agoras. There is a fairly orderly approach to the urbanization of mankind and his representation of self in the city core or the cutural center, if we are to agree with Jan Despos.[7] Simple steps in this progression are as follows:

Fig. 4

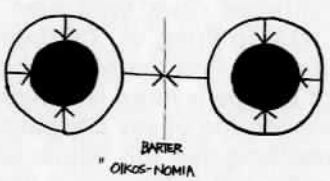
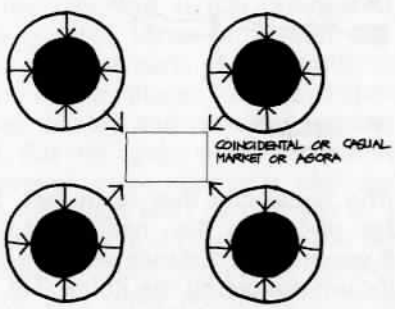
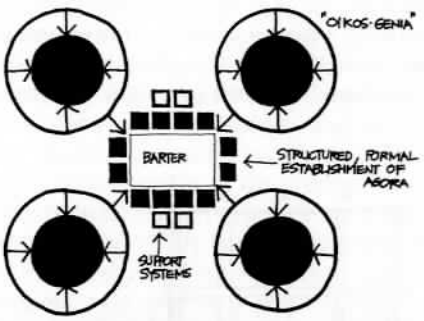


Fig. 5



"SYN-OIKISOS"
Fig. 6



(FIG. 6 CONT.)

1. "Agriculture leads to a sedentary way of life." When crops are planted, there must be units of time made available for other work and production—the maintenance of home, or "OIKOS"—(Fig. 4).
2. The family of origin or "OIKOS-GENIA" produces more food than it can consume; where several OIKOS-GENIA produce different varieties, in abundance, barter or exchange will take place, or "OIKOS-NOMIA." —(Fig. 5)
3. "Increase in production leads to increase in exchange." This two-pronged increase will seek a convenient centre for operation and becomes a walled or an enclosed square. As the economic picture continues, or as production of agriculture and handicrafts increase, people begin to congregate together near the agora—or close to the market—"SYN-OIKISOS." (Fig. 6) The act of congregation and the place where it occurs becomes sacred and the real symbol of the social order "POLIS," a core.

The pre-determination of a rule or system becomes the prerogative of a ruling class, a conqueror, or a transitory government. The rule or system, however, may become valid through repetition. Therefore, the subsequent cities through history that have commanded our attention and interest have maintained the idea and the existence of a centre or a core, to the point where "POLIS," at many levels, is an essential part of urban form. A more comprehensive idea might be that "Synoikismos" takes place where several people, families, or groups congregate. This gregarity requires or results in "place," or space being structure, set aside, or legally confiscated, as by Philip II of Spain in the Plaza Mayor Act, or as by Baron von Hausmann through plenipotentiary right.[8]

Militos (Militeus) (Fig. 7) was a city of this type with the Greeks settling the northern portion with small blocks around the agora and much later, the Romans establishing larger housing blocks to the south of the same agora. The subtle link in this complex combination was the time-honored cross street that gave onto the largest uncovered (visually enclosed) space within the walled city. (Fig. 7) This can only indicate that the need to organize within sight or access of an agora was common to most national groups. Timgad, usually called a functionally perfect plan image, was a refined and "civilian" version of a Roman military camp that served adequately and subsequently Christian and Mohammedan in history's timetable.

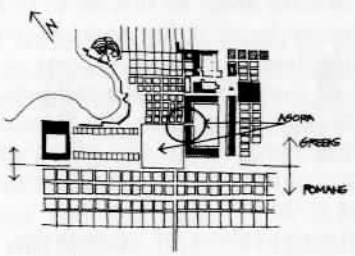


FIG. 7

In any society, the refining or constant evolution of a system, cult, or style, may lead to its decadence, or lead to its symbolizing the decadence of the society itself. Despos said, "The extent of the Forum (Roman) is an expression of the will to world power (Weltmacht), conditioned by the cult of the strong person (Personen Kult). Pronounced subdivision into several squares and

groups of squares; an adaptation of the Asia Minor Agora to the ecumenical conditions of Rome." [9] The Christian condition as a physical entity in the person of Constantine and his new Rome (or Polis) was seen in the plan imagery of Thebes—a complete walled precinct (Fig. 8) that included physical existence at every level.

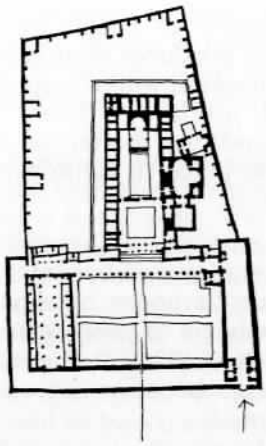
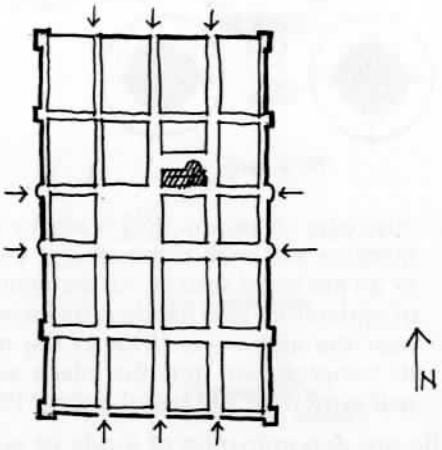


FIG. 8 THEBES



MONTPAZIER FIG. 9

These forms lent themselves to Mohammedan need as Moslem spread west, and through simple changes in orientation and interior arrangement, the agora walls easily sustained Islam. In turn, this agora form came to mean the same type of "Drang nach Macht" that the Roman Forum meant, and "Medina became an absolutist urban foundation of great suggestive power. A demonstrative symbol and an idealogical monument." [10] The Hellenistic Roman (cum Islamic) systems of acknowledging space have carried through the deliberate plan of core areas to this time. In this, Montpazier (Fig. 9) 1284 and the definitive hierarchy of living spaces (syn-OIKISMOS) grouped around the economic and ideological core varies not at all from a city like Jena.

All of these historical examples have indicated a humanistic group orientation or significance. In the Western World, as we approached Absolutism in Baroque Europe, the city plans with their sequences of spaces, were endemic of the dominance of a single ruler. Agora as core of community life was no longer valid.

Industrialization of economics, and internationalization of politics has led to the open-ended systems in city planning and urban design that are now practiced. Cities have become agglomerations of buildings and people. Rome was a clutter of high-rise apartments, even after Kahun (ancient Egypt), and Asia Minor had given up any real "political, cultural, or ideological focus." [11]

It seems that the Urbanization of man has become the repetition of only two types of urban design: the acretion of identity by achieving urban spaces through main force; or the pre-disposition of *total urban design* with meeting place, agora and central core as emerging symbol of social structure. The latter alternative was adhered to by Ernst May in cities which he designed in Soviet Russia immediately at the outset of the Revolutionary Epoch.

These new cities were uncommonly like Militos, with strong residential geometry grouped around great spaces and symbolic structures. An *imposition*

of a cultural/political system without adhering to influences of physical geology or topography.[12] May's cities and city centres were not the only ones built to achieve civic awareness. To this end, but with very limited initial success, many of the Scandinavian housing developments were designed with every possible social, economic, and technical consideration in a way that *minimized* the identity or social awareness. This was done by schematic placement of new articulations without due recognition of connections, linkages, and central foci. This type of design results in pseudo-cities, or "agglomerations of de-urbanized population." [13] By more comprehensive study of occupancy patterns, transportation, and use diagrams, the recent (W.W. 1) errors in design have been minimized, and the real urbanization of a number of people within a planned concept has been achieved. Cities like Columbia, (Maryland), Cumbernauld, Maersta (Swed.), Farsta (Swed.), Toulouse (Fr.), work a system of order which is immediately juxtaposed within a chaotic landscape. The context, or natural locus, of the landscape, delimits the type of extension these systems, as geometric, or an "open-ended" (Lockierte) as they might be in concept, may have. However, this same natural context formed the basic parameter and generator for the form of the settlement or the city.

Conclusion

We have been enlarging upon two ideas, above, both of which are essentially historic in that they are the time-honored bases for certain contemporary principles, transportation, and socio-political form. The idea of the city became, from Mileteus to Märsta, a celebration of ideas and activities that were essentially restricted by certain bounds, either man-imposed or nature-imposed. This type of uni-lateral imposition has to result in a simplistic geometry (geomorphic) either circular (concentric) or rectangular (grid), punctuated by a system of major cores (agora) and sub-cores. This morphology insists that the particular society will make a progression from agriculture through industry, to a social order than can be adequately represented in the nature of city spaces, markets, etc.

This same development from "OIKOS" to "POLIS" is exemplified by the development of more sophisticated modes of transportation, from sedentary and solitary, to high speed and multiple. The essential graphic for this transportation is a straight line, though *insular* traffic within any city system assumes a circular function with major conflicts occurring at intersections. Because of the conflict of these two elements, static form of the general metropolis and the tendency of transport to become high-speed and directional, city form becomes distended and chaotic, traffic stutters and lurches, and the economics of city support systems become irregular, at best.

Since most of our cities are planar, that is, flatly two-dimensional in the existence of structures and transportation at the same level, the conflicts are heightened. The super blocks that are delimited by major highways cannot expand laterally and must expand vertically. There does not seem to be any way, however, for the traffic to expand vertically from the restricted road bed that now exists, certainly because of radii, intersections, and necessity to maintain speed and flow. It becomes apparent that:

> With a vertical expansion of structures, within an established boundary (super block), there must be adequate provision made for vertical expansion of transportation. This two-fold expansion makes absolutely mandatory the

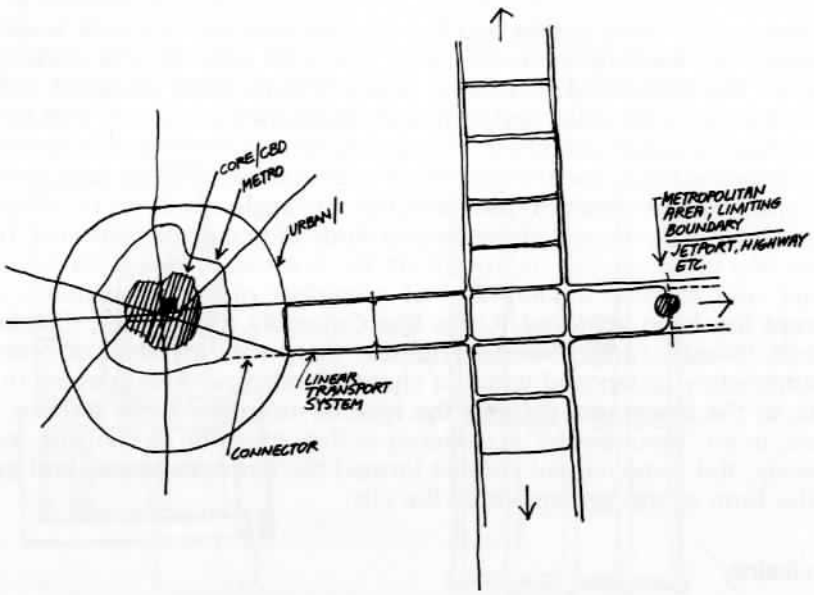


FIG. 10 LINEAR IMPOSITION ON RADIALLY-ESTABLISHED CITY

use of "air rights" and sub-surface spaces, especially in areas where lateral connections of spaces are required.

With planning of new towns, satellites, and peripheral developments, a set relationship or system that will organize the existing city form *with* a strongly articulated linear transport structure (Fig. 10) becomes a functional *and* aesthetically articulated solution.

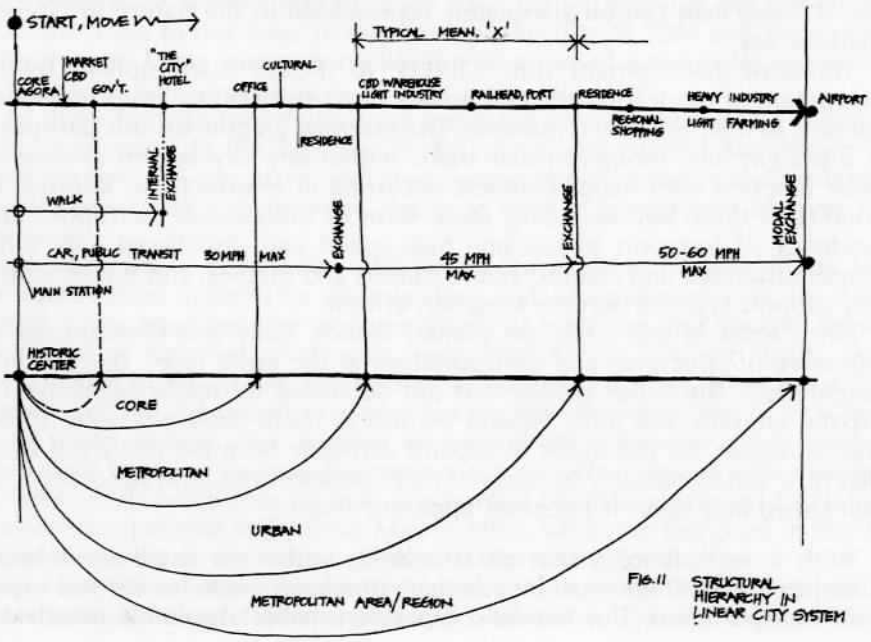


FIG. 11 STRUCTURAL HIERARCHY IN LINEAR CITY SYSTEM

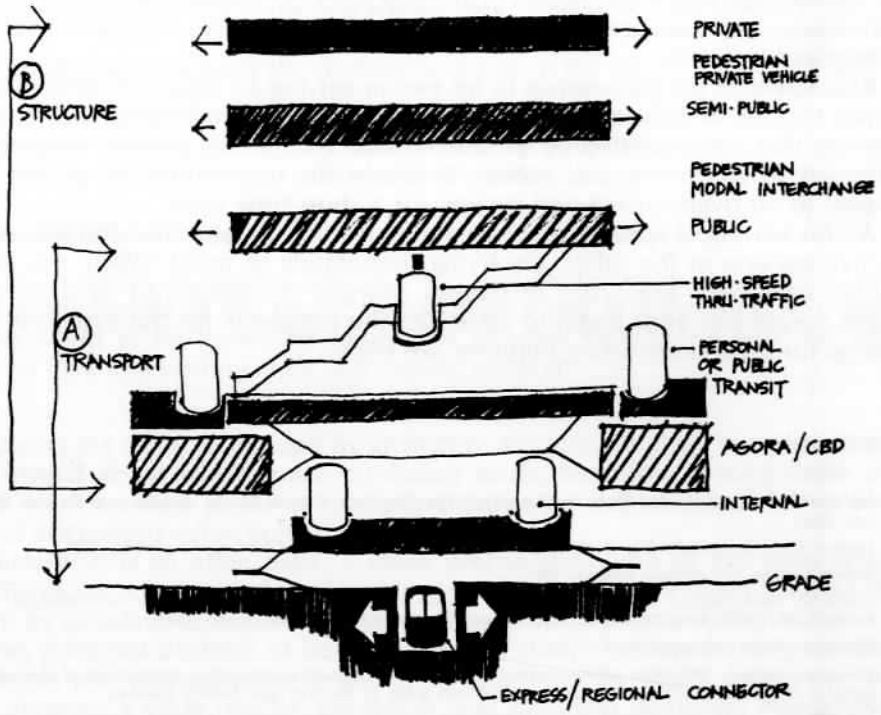


FIG. 12 LAYERED LINEAR STRUCTURE (SECTION)

HEIGHT (A) VARY, DISTANCE FROM CBD
(B) VARY, DISTANCE FROM CBD + DENSITY OF SOCIO-ECONOMIC MIX

This expansion and reordering system makes it necessary to assume a three-dimensional rather than a two-dimensional approach to both structure and mobility. The ultimate expansion of any agglomeration requires a structural hierarchy that can direct locations from the existing core to the furthest metropolitan boundary. (Fig. 11) To be able to accomplish this dimensional directing, the system becomes a *layered linear structure,* with functional quarters bounded by the access and exchange points of vehicular and pedestrian circulation and mobility (Fig. 12), the spaces, *not* the interstices.

The cross-over and exchange points would provide the loose boundaries to activities which take place within the separate areas, and provide, in turn, access or connections to them.

The functions and structures which occupy the spaces between, under, and over the transportation arteries are nominally neighborhoods, sectors, or quarter with singular or continuous identity. The length from core to metropolitan/regional boundary is generally fixed by an area's ability to protect itself (fire, police) and provide for a number of humans under its civic responsibility (rents, taxes). The segmental distances between any two interchanges, however, becomes a function of the area's projected potential in any category of the

hierarchy (Fig. 11). This distance, the mean X, may be adjusted by computer simulation with sufficient accuracy to yield a comfortable support for a predeterminable future.

Regardless of the parameters to be met in solving an equation which determines success or failure of a civic structure, humanity will be served. The responses that are generated by an open-ended system may only be temporarily adequate to an open-ended society. Similarly, the over-structured system may appeal to an overly-structured society for a short time only.

At this writing, it appears that humanity, technology, and the ultimate means to harness one to the other, are trying desperately to mold. While the possibilities have been practically exhausted, the gap is closing ever so slightly. As these means and ends begin to associate, the prospects for the evolution of a design for urban structuring improve, we hope.

Footnotes

1. Ian McHarg, "An Ecological Basis for Planning," *The City As a System*. Boston Architectural Center, December, 1968.
2. Herbert Ohl, *Hochschule fuer Gestaltung* (Author's translation). Ulm, Germany, December, 1958.
3. Robert Geddes, *AIA Journal*, January, 1967.
4. Fumihiko Maki—Masato Ohtaka, "Collective Form—Three Paradigm," *Investigations in Collective Form*, F. Maki. St. Louis, Mo.: School of Architecture, Washington University, June, 1964.
5. Zähringer Cities (see appendix I).
6. Doxiades, Lecture, "The City of the Future," Dec. 11, 1967, Syracuse University; comparison of demographic patterns of growth which determines megalopolitan areas in Western and Eastern cultures.
7. Jan Despos, "Das Neuzeitliche Kulturzentrum-die Agora" ("The Modern Cultural Center—The Agora"), Bauen und Wohnen. München: Verlag Bauen und Wohnen Gmbh, February, 1963, p. 2.
8. This right of confiscation continues as rights of eminent domain, or the rights of an authority to confiscate land for its own use. This right extends from local to national levels, depending on authority and ultimate use.
9. Despos, p. 50.
10. Despos, p. 51.
11. Despos, p. 54.
12. Note plan and execution of Römerstadt, Northwest portion of Frankfurt, Germany 1936-1938 by Ernst May.
13. Despos, p. 56.